

# WOLF CREEK

NUCLEAR OPERATING CORPORATION

Donna Jacobs  
Vice President Operations and Plant Manager

October 20, 2004

WO 04-0046

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Subject: Docket No. 50-482: Licensee Event Report 2004-004-00, Insufficient Planning Results in Reactor Trip When Restoring From Test

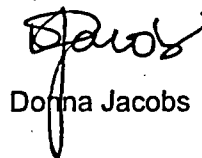
Gentlemen:

The enclosed Licensee Event Report (LER) 2004-004-00 is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) regarding a Reactor Trip at Wolf Creek Generating Station.

Wolf Creek Nuclear Operating Corporation has made no commitments in the enclosed LER.

If you should have any questions regarding this submittal, please contact me at (620) 364-4246 or Mr. Kevin Moles at (620) 364-4126.

Sincerely,



Donna Jacobs

DJ/rlg

Enclosure

cc: J. N. Donohew (NRC), w/e  
D. N. Graves (NRC), w/e  
B. S. Mallett (NRC), w/e  
Senior Resident Inspector (NRC), w/e

IE22

## LICENSEE EVENT REPORT (LER)

(See reverse for required number of  
digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to [infocollects@nrc.gov](mailto:infocollects@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME WOLF CREEK GENERATING STATION	2. DOCKET NUMBER 05000 482	3. PAGE 1 OF 4
---	-------------------------------	-------------------

## 4. TITLE

INSUFFICIENT PLANNING RESULTS IN REACTOR TRIP WHEN RESTORING FROM TEST

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
08	22	2004	2004	- 004	- 00	10	20	2004	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)									
10. POWER LEVEL 100	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

## 12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME Kevin J. Moles, Manager Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) (620) 364-4126
---	--

## 13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

## 14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO

## 15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On August 22, 2004 at 1010 a.m. Central Daylight Time, Wolf Creek Generating Station (WCGS) experienced a reactor trip during routine surveillance testing of the "B" train Solid State Protection System (SSPS). To facilitate this testing, WCGS had entered Required Actions for Conditions A and R of Technical Specification (TS) 3.3.1, Table 3.3.1-1, Function 19, which permits operation of the plant with one train of SSPS inoperable and the associated reactor trip breaker (RTB) bypassed for up to two hours. During this testing, WCGS Instrumentation and Controls (I&C) technicians reported to the shift manager in the control room that an indication light did not illuminate as required. During restoration from the procedure, a required step to reinstate the necessary memory circuit blocks for the 25% power reactor trip signals was not performed. When the input error inhibit switch for the "B" train SSPS was returned to the "Normal" position without these memory circuit blocks in place, a reactor trip signal was generated.

This was a human performance related event where an I&C technician did not perform the necessary steps to restore from the surveillance test procedure.

The safety significance of this event is low. All control rods fully inserted, and all safety-related equipment operated as expected. There were no adverse effects on the health and safety of the public.

## LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
WOLF CREEK GENERATING STATION	05000 482	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		2004	-- 004	-- 00	

## 17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

## Background:

The Solid State Protection System (SSPS) [EIS Code: JG] takes inputs from various process and nuclear instrument channels that monitor the conditions of plant parameters. The system combines these signals in the required logic combination and generates a reactor trip signal to the undervoltage coils of the reactor trip breakers (RTB) when the necessary combination of signals occurs. This trip signal also deenergizes the auto shunt trip relay that in turn closes a contact that energizes the shunt trip signals which indicate the condition of input signals, partial trip and full trip functions, and the status of the various blocking, permissive, and actuation functions. In addition, the system includes means for semi-automatic testing of the logic circuits.

## Plant Conditions Prior to the Event:

MODE – 1

Power – 100 percent

Normal Operating Temperature and Pressure

## Event Description:

On August 22, 2004, Wolf Creek Generating Station (WCGS) was operating at 100 percent steady state power, with no trains of safety related systems out of service. At 7:52 a.m., Instrumentation & Control (I&C) personnel commenced performing STS IC-211B, "Actuation Logic Test Train B Solid State Protection System." At 8:09 a.m., the Reactor trip bypass breaker "B" was racked in and closed to support this testing, and the plant was in Technical Specification (TS) 3.3.1, Table 3.3.1-1, Function 19 (Reactor Trip Breakers). Per this TS, operation in this condition is allowed for testing for up to 2 hours. At 9:05 a.m., I&C personnel reported to the shift manager in the control room that an indicating light did not illuminate as required during the performance of the surveillance. WCGS licensed control room operators then entered TS 3.3.2, Table 3.3.2-1, Function 5.a (Automatic Actuation Logic and Relays for Turbine Trip and Feedwater Isolation) and I&C began an investigation to determine the reason for the light not illuminating.

At 9:55 a.m., investigation efforts by I&C personnel had not determined the cause of the light failure. At this point, the WCGS shift manager directed the I&C technicians to restore from the test procedure in order to open the reactor trip bypass breaker "B" such that the requirements of Technical Specification 3.3.1 would be met and all applicable Conditions and Required Actions could be exited.

The I&C lead technician then proceeded to commence the actions that were contained within the restoration section of the test procedure, and at 10:07 a.m., the "B" reactor trip bypass breaker was re-opened and Conditions A and R of TS 3.3.1, Table 3.3.1-1, Function 19 were exited. During further steps in the restoration from the test procedure, an annunciator for the SSPS "B" train general warning did not clear as expected. The I&C technician believed this to be because the input error inhibit switch was not in the "Normal" position. The step that would have placed the input error inhibit switch back in the "Normal" position had not been reached when the failed indicator was identified. The technician then referred to the step in the procedure to return the input error inhibit switch to "Normal," however he did not complete the steps in the procedure to reinstate each of the memory circuit blocks for the 25% power reactor trip signals into the circuit. At 10:10 a.m., when the technician placed the input error inhibit switch in the "Normal" position, the plant experienced a reactor trip.

## LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
WOLF CREEK GENERATING STATION	05000 482	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
		2004	-- 004	-- 00	

## 17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

All rods fully inserted and all safety-related equipment operated as designed. Initially a concern with the operation of the steam generator atmospheric relief valves (ARVs) and main steam dump valves was reported. This concern was raised based upon the control room operator's observation that these components did not function consistent with what he had experienced on the WCGS training simulator. These components were subsequently found to be functioning as designed and the inconsistency was determined to be due to a modeling deficiency in the simulator.

There were no other evolutions in progress at the time of the trip, nor was there any major equipment out of service.

## Basis for Reportability:

This event is reportable per 10 CFR 50.73(a)(2)(iv)(A), which requires reporting of "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section." Paragraph (B) (1) of 10 CFR 50.73(a)(2)(iv) includes "Reactor protection system (RPS) including: reactor scram or reactor trip."

## Root Cause:

This was a human performance related event where the I&C technicians proceeded to the restoration section of the test procedure without first performing the steps necessary to reinstate the 25% power reactor trip signals into the circuit. Step 8.9.3 of STS IC-211B which returned the input error inhibit switch to the "Normal" position was completed without the completion of step 8.9.1, which reinstates all of the memory circuit blocks for 25% power reactor trip signals.

In accordance with 10 CFR 50.73(b)(2)(ii)(J), the causes and circumstances related to this event are discussed below.

Insufficient planning for the restoration from STS IC-211B resulted in the I&C technicians being directed by the Shift Manager that the entire test procedure must be restored from within two hours of the start of the evolution. The Shift Manager did not inform the I&C technicians that the requirements of LCO 3.3.1 had been met, and that Conditions A and R of the TS had been exited when the "B" reactor trip bypass breaker was opened. The time requirements associated with the performance of this surveillance test are considered to have contributed to this event.

## Corrective Actions:

The Shift Manager and the I&C technicians that were involved with the performance of STS IC-211B have been coached by station management on the areas of procedure use and adherence and time pressure. Senior station management provided specific expectations for actions to be taken when it is determined that a procedure cannot be followed as written. These expectations are applicable to the performance of all Operations and I&C surveillance procedures. Additional corrective actions are under development as part of the resolution of this event through Performance Improvement Request (PIR) 2004-2162.

# LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
WOLF CREEK GENERATING STATION	05000 482	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
		2004	-- 004	-- 00	

**17. NARRATIVE** (If more space is required, use additional copies of NRC Form 366A)

**Safety Significance:**

The safety significance of this event is low. All safety related systems, structures, and components performed as required and expected. Nuclear safety was maintained by implementation of station procedures after the automatic shutdown of the reactor. There were no adverse effects on the health and safety of the public.

**Operating Experience/Previous Events:**

A review of WCNOG License Event Reports submitted over the last 5 years revealed one instance (LER 2003-001-00) where a reactor trip resulted from operation of a component outside of procedural guidance. The cause and corrective actions associated with LER 2003-001-00 are not related to the events and circumstances described in this LER.